Front Suspension & Steering

NOTE: On Air Bag Equipped Models, Refer To "Air Bag System Precautions" Located In The Front Of This Manual For System Disarming & Arming Procedures.

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WHEEL BEARING

ADJUST

2WD MODELS

1. Raise and support front of vehicle.
2. Remove hub dust cover, then the cotter pin.
3. While rotating wheel assembly in forward direction, tighten spindle nut to specification to fully seat the bearings.
4. Loosen nut to the "just loose" position, then tighten the spindle nut finger tight.
5. If either spindle hole does not line up with a spindle nut slot, back off spindle nut not more than ½ nut flat.
6. Install new cotter pin, then measure hub endplay. Endplay should be .001–.005 inches when properly adjusted.
7. Install hub dust cover and lower vehicle.

4WD MODELS

These vehicles use sealed front wheel bearings which require no lubrication or adjustment.

BALL JOINT INSPECTION

2WD MODELS

Upper

Before checking ball joints, wheel bearings must be properly adjusted.

1. Raise vehicle and position floor stands under right and left lower control arms near each lower ball joint.
2. Position dial indicator against wheel rim, **Fig. 1.**
3. Shake wheel, **Fig. 1,** and read gauge. Horizontal deflection should not exceed .125 inch.
4. If reading exceeds .125 inch or if ball stud has been disconnected from knuckle assembly and any looseness is detected or stud is loose, replace ball joint.

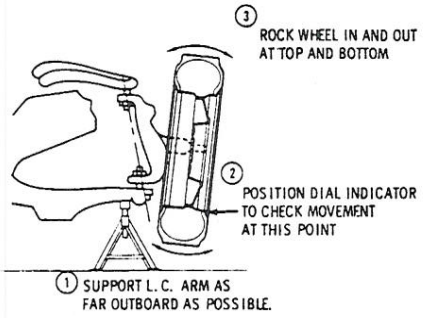
3
ROCK WHEEL IN AND OUT AT TOP AND BOTTOM
2
POSITION DIAL INDICATOR TO CHECK MOVEMENT AT THIS POINT
1
SUPPORT L.C. ARM AS FAR OUTBOARD AS POSSIBLE.
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Fig. 1 Upper ball joint inspection. 2WD models

Lower

The lower ball joint has a visual wear indicator, **Fig. 2.** To check, vehicle weight must rest on wheels to properly load ball joints.

4WD MODELS

1. Raise and support vehicle.
2. Support lower control arm with suitable jack stand.
3. Check lower ball joint for horizontal looseness as follows:
   a. Place suitable dial indicator against wheel rim at lowest outboard point, **Fig. 3.**
   b. Rock wheel in and out while reading dial indicator.
   c. Dial indicator reading should be no more than .125 inch.
   d. If reading is too high, inspect lower ball joint for vertical looseness.
4. Place vehicle on suitable jack stands.
5. Place suitable dial indicator against spindle, **Fig. 4.**
6. Pry between lower control arm and outer bearing race while reading dial indicator, **Fig. 5.**
7. If reading is more than .125 inch, replace lower ball joint.
8. If lower ball joint is within specification and there is too much horizontal looseness, check upper ball joint as follows:
   a. Disconnect ball joint from knuckle.
   b. Check for looseness by twisting ball joint stud with fingers, if any looseness is found replace ball joint.

BALL JOINT

REPLACE

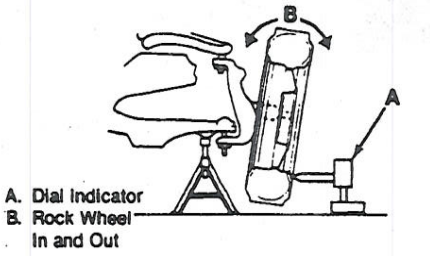
UPPER

2WD Models

1. Raise vehicle and support at lower control arm with jacks. **Jack must be positioned between coil spring seat and ball joint of lower control arm to obtain maximum leverage against coil spring pressure.**
2. Remove wheel and tire assembly, then the disc brake as outlined in "Disc Brakes" chapter.
3. Remove cotter pin and stud nut from ball joint.
4. Using ball joint separator tool No. J-23742, or equivalent, break stud loose from steering knuckle. Support knuckle assembly to avoid damaging brake line.
5. With control arm in raised position, drill rivets ¼ inch deep with a ⅛ inch drill, then drill off rivet heads with a ½ inch drill.
6. Punch out rivets, then remove ball joint.
7. Reverse procedure to install. Replace rivets with attaching bolts and nuts. Tighten attaching nuts and stud nut to specifications.

4WD Models

1. Raise and support vehicle.
2. Remove tire and wheel assembly.
3. Remove wheel speed sensor electrical connector from upper control arm.
4. Disconnect wheel speed sensor electrical connector.
5. Remove cotter pin from upper ball joint stud.



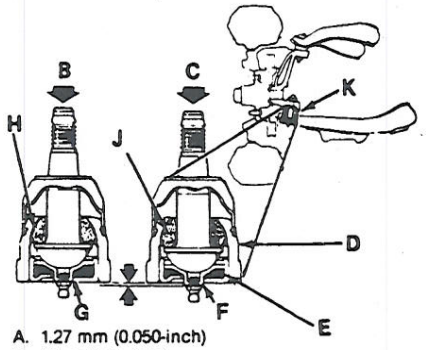


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Fig. 2 Lower ball joint wear indicator. 2WD models

6. Remove upper ball join stud nut.
7. Using suitable pry bar placed under upper control arm and on top of frame, pry upward.
8. Carefully hammer on steering knuckle in the area of upper ball joint using suitable hammer.
9. Remove upper ball joint from steering knuckle.
10. Using suitable ⅛ inch drill, drill approximately ¼ inch hole in center of each ball joint attaching rivet.
11. Drill rivet heads away using suitable ½ inch drill bit, **Fig. 6.**
12. Remove rivets using suitable punch, **Fig. 7.**
13. Remove upper ball joint from control arm.
14. Reverse procedure to install. Install upper ball joint retaining nuts and bolts as shown in **Fig. 8.**

LOWER

2WD Models

1. Raise vehicle and support with jack stands under frame side rails.
2. Remove front wheel, then support control arm spring seat with a jack.
3. Remove disc brake as outlined in "Disc Brakes" chapter.
4. Using ball joint separator tool No. J-23742, or equivalent, remove cotter pin and stud nut, then break ball joint loose from steering knuckle.
5. Inspect and clean tapered hole in steering knuckle. If hole is out of round or damaged in any way, steering knuckle must be replaced.
6. Guide lower control arm out of opening in splash shield. **Block knuckle assembly out of way by placing wooden block between frame and upper control arm.**
7. Remove grease fittings, then press ball joint from lower control arm.
8. Reverse procedure to install.

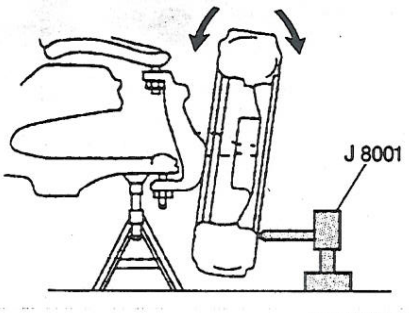

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Fig. 3 Ball joint horizontal looseness inspection. 4WD models

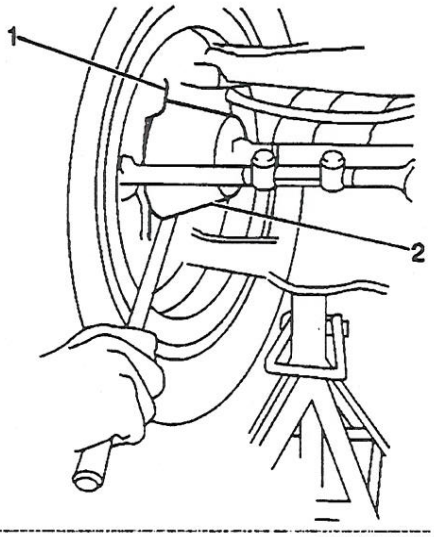

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Fig. 5 Ball joint vertical looseness inspection. 4WD models

4WD Models

1. Raise and support vehicle.
2. Remove tire and wheel assembly.
3. Remove cotter pin from lower ball joint stud.
4. Remove lower ball join stud nut.
5. Using suitable pry bar placed on top of upper control arm and on bottom of frame, pry downward.
6. Carefully hammer on steering knuckle in the area of lower ball joint using suitable hammer.
7. Remove lower ball joint from steering knuckle.
8. Using suitable ⅛ inch drill, drill approximately ¼ inch hole in center of each ball joint attaching rivet.
9. Drill rivet heads away using suitable ½ inch drill bit, **Fig. 6.**
10. Remove rivets using suitable punch, **Fig. 7.**
11. Remove lower ball joint from control arm.
12. Reverse procedure to install. Install lower ball joint retaining nuts and bolts as shown in **Fig. 8.**

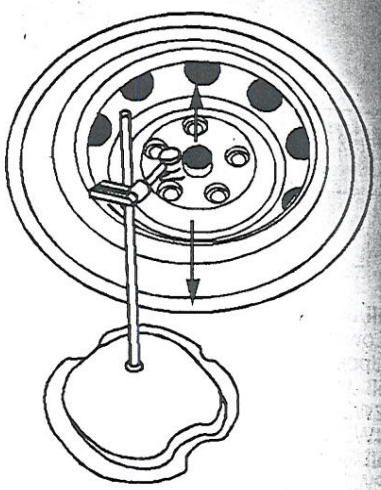

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Fig. 4 Dial indicator mounting. 4WD models

COIL SPRING

REPLACE

2WD MODELS

1. Raise and support vehicle.
2. Remove the two shock absorber screws and push shock up through control arm and into spring.
3. Support vehicle so that control arms hang free.
4. Place coil spring replacement tool No. J-23028, or equivalent, into position cradling the inner bushings, **Fig. 9.** Tool should be secured to a jack.
5. Remove stabilizer to lower control arm attachment.
6. Raise the jack to remove tension on lower control arm pivot bolts, then install a chain around spring and through control arm and remove the nuts and bolts.
7. Lower control arm by slowly lowering jack.
8. With all pressure removed from spring, remove safety chain and spring. **Do not apply force to lower control arm and ball joint to remove spring. Proper maneuvering of spring will allow for easy removal.**
9. Reverse procedure to install, noting the following:
   a. Ensure coil spring is installed with flat coiled end with gripper notch on top and the lower coil covering all or part of one drain hole in lower control arm and with other hole exposed.
   b. Install both lower control arm bolts from front to rear to ensure adequate steering linkage clearance.

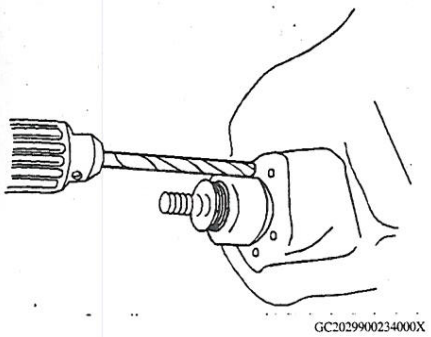

Fig. 6 Ball joint rivet head removal. 4WD models

c. Tighten stabilizer link nuts to specification, lower vehicle and tighten lower control arm bolt nuts to specification, after suspension has been weighted.

SHOCK ABSORBER

REPLACE

2WD MODELS

1. Raise and support vehicle.
2. Hold shock upper stem from turning with a wrench and remove nut, retainer and grommet.
3. Remove lower shock pivot bolts, then remove shock absorber from vehicle.
4. Reverse procedure to install. Tighten upper attaching nut and lower attaching bolts to specification.

4WD MODELS

Refer to **Fig. 10** for shock absorber replacement procedure on 4WD vehicles.

CONTROL ARM

REPLACE

UPPER

2WD Models

1. Raise vehicle and support.
2. Support lower control arms with floor stands.
3. Remove wheel and tire assembly.
4. Disconnect upper ball joint from steering knuckle and support brake rotor to prevent damage to brake hose.
5. Remove upper control arm attaching nuts and bolts, **Fig. 11,** noting location of any shims removed.
6. Remove upper control arm.
7. Reverse procedure to install, noting the following:
   a. Install shims in their original position.
   b. Tighten control arm pivot nuts to specifications.

4WD Models

1. Raise vehicle and support.
2. Support at frame and raise lower control arm to relieve spring tension, placing jack stand as far out board on lower control arm as possible.
3. Remove front tire and wheel assembly.

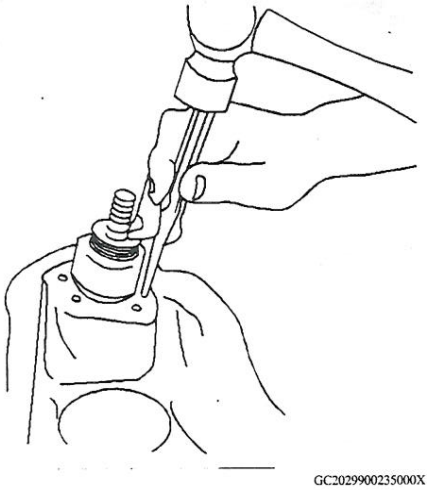

Fig. 7 Ball joint rivet removal. 4WD models

4. Remove and install control arm, **Fig. 12,** supporting spindle to prevent damaging brake hose.

LOWER

2WD Models

1. Remove coil spring as outlined in "Coil Spring, Replace."
2. Remove lower ball joint stud, then remove lower control arm through opening in splash shield.
3. Reverse procedure to install.

4WD Models

Refer to **Fig. 13** for lower control arm replacement procedure on 4WD vehicles.

CONTROL ARM BUSHING

REPLACE

UPPER

1. Remove upper control arm as outlined in "Control Arm, Replace."
2. **On 2WD models,** remove nuts from end of pivot shaft, then remove bushings, **Fig. 14.**
3. **On all models,** install bushings by installing pivot shaft in control arm and pressing new bushings into control arm, **Fig. 15.** Tighten pivot shaft nuts to specifications, with weight of vehicle resting on wheels. **Both bushings must be installed .48–.52 inch from face of control arm to bushing outer sleeve.**

LOWER

2WD Models

1. Remove coil spring as outlined under "Coil Spring, Replace."
2. Remove lower control arm pivot bolts. Refer to "Control Arm, Replace."
3. Drive bushing flare down flush with rubber of front bushing, then remove front and rear bushings from control arm, **Figs. 16 and 17.**

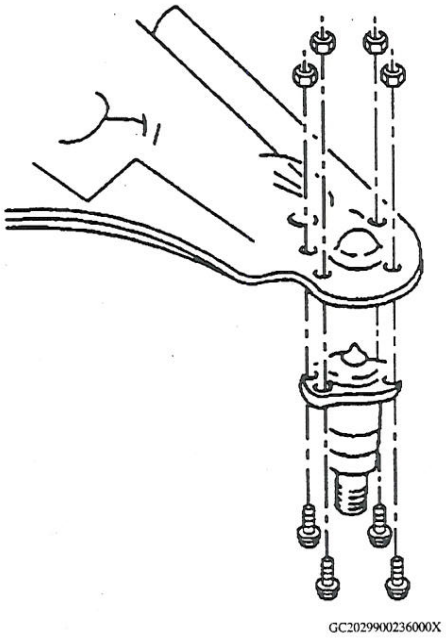

Fig. 8 Ball joint installation. 4WD models

4. Install front bushing, **Fig. 18,** then flare the bushing, **Fig. 19.**
5. Install rear bushings, **Fig. 20,** then the lower control arm as outlined previously.

4WD Models

1. Raise and support vehicle.
2. Remove wheel and tire assembly.
3. Unload torsion bar.
4. Remove stabilizer bar as outlined under "Stabilizer Bar Replace."
5. Remove shock absorber as outlined under "Shock Absorber Replace."
6. Remove control arm pivot bolts then the lower control arm.
7. Remove lower control arm front and rear bushings, **Fig. 21.**
8. Reverse procedure to install.

STEERING KNUCKLE

REPLACE

2WD MODELS

1. Raise and support front of vehicle, then support lower control arm with jack. **Jack must be positioned between coil spring seat and ball joint of lower control arm to obtain maximum leverage against coil spring pressure.**
2. Remove wheel and tire assembly.
3. Remove brake caliper, then the hub and rotor assembly.
4. Remove splash shield to steering knuckle attaching bolts.
5. Using tie rod puller tool No. J-6627, or equivalent, remove tie rod end from steering knuckle.
6. If steering knuckle is to be replaced, remove knuckle seal.
7. Using ball joint separator tool No. J-23742, or equivalent, remove ball joint studs from steering knuckle.

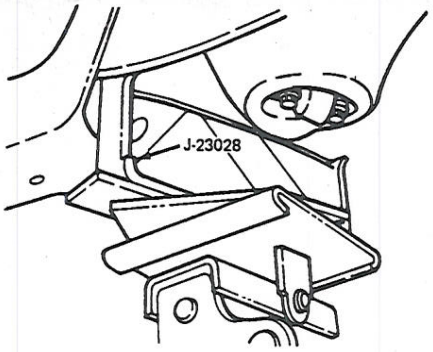

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Fig. 9 Coil spring removal w/adapter tool. 2WD models

8. Raise upper control arm to disengage upper ball joint stud from knuckle.
9. Remove knuckle from lower ball joint stud.
10. After removal, inspect tapered holes. If holes are out of round or deformation or damage is observed, replace steering knuckle.
11. Reverse procedure to install. Install tie rod end using ball joint seating tool No. J-29193, or equivalent and **torque** to 15 ft. lbs.

4WD MODELS

1. Raise and support vehicle.
2. Remove tire and wheel assembly.
3. Remove drive axle nut, **Fig. 22.**
4. Remove brake caliper assembly.
5. Remove hub and bearing assembly.
6. Remove cotter pin and nut from tie rod stud.
7. Remove tie rod assembly, **Fig. 23.**
8. Remove ball joints from knuckle, refer to "Ball Joint, Replace."
9. Removal knuckle from vehicle.
10. Reverse procedure to install.

TORSION BAR

REPLACE

4WD MODELS

1. Raise and support vehicle.
2. Remove transmission shield.
3. Remove both torsion bar adjusting bolts, **Fig. 24.**
4. Remove lower link mount nut from one side.
5. Remove torsion bar, **Fig. 25.**
6. Remove lower link mount nut from opposite side, then the link mount.
7. Remove upper link mount nut, then the upper link, **Fig. 26.**
8. Reverse procedure to install.

STABILIZER BAR

REPLACE

2WD MODELS

1. Raise and support front of vehicle.

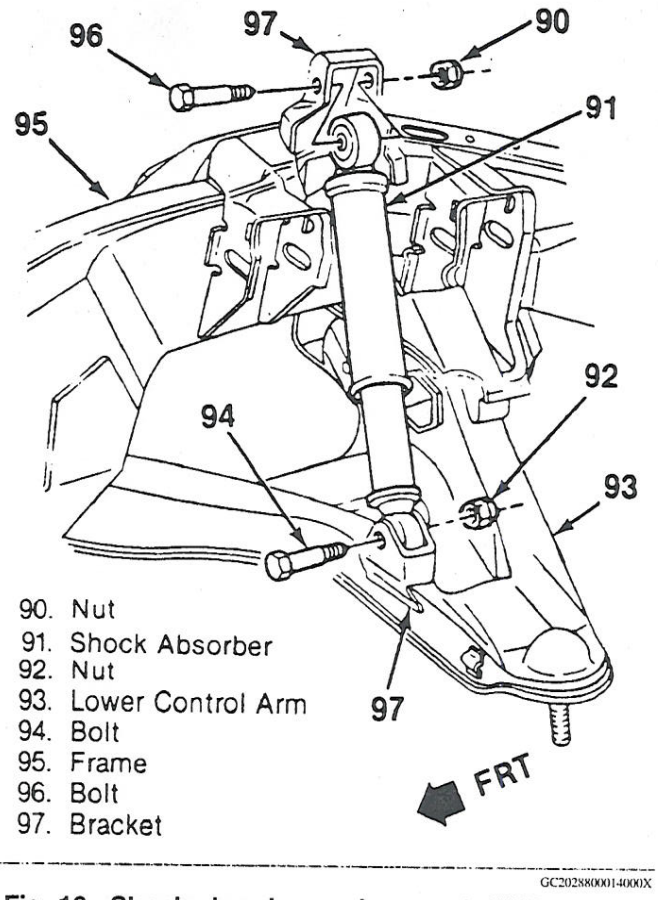

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Fig. 10 Shock absorber replacement. 4WD models

2. Remove stabilizer link bolt nuts from both sides, then pull link bolt from linkage and remove retainers, grommets and spacers, **Fig. 27.**
3. Remove stabilizer bracket to frame or body attaching bolts, then the stabilizer bar, bushings and brackets.
4. Reverse procedure to install, noting the following:
   a. Install stabilizer bar so identification stamping appears on righthand side of vehicle.
   b. Position rubber bushings squarely in brackets with slit facing front of vehicle.

4WD MODELS

Refer to **Fig. 28** for stabilizer bar replacement procedure.

POWER STEERING GEAR

REPLACE

1. Disconnect pressure and return hoses from steering gear housing, then plug hose ends and gear housing ports to prevent entry of dirt.
2. Remove coupling shield.
3. Remove retaining nuts, lock washers and bolts at steering coupling to steering shaft flange.
4. Remove pitman arm nut and washer from pitman shaft.
5. Mark relation of arm position to shaft, then remove pitman arm using suitable puller.
6. Remove screws securing steering gear to frame and remove gear from vehicle.
7. Reverse procedure to install.

POWER STEERING PUMP

REPLACE

1. Disconnect pressure and return hoses from power steering pump or steering gear housing, then secure ends in raised position to prevent oil drainage. Cap all open lines and fittings.
2. Remove drive belt.
3. Remove power steering pump attaching bolts.
4. Remove power steering pump assembly, **Figs. 29 and 30.**
5. Reverse procedure to install.

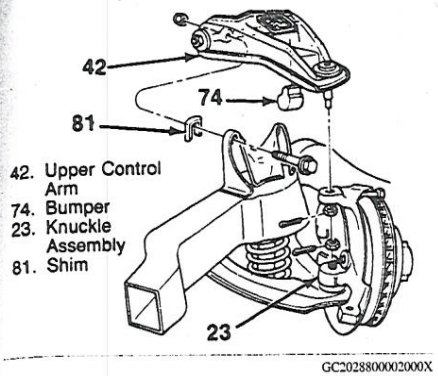


Fig. 11 Upper control arm replacement. 2WD models

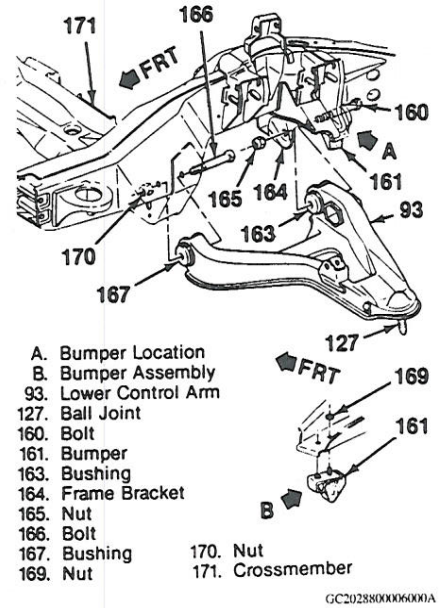


Fig. 13 Lower control arm replacement. 4WD models

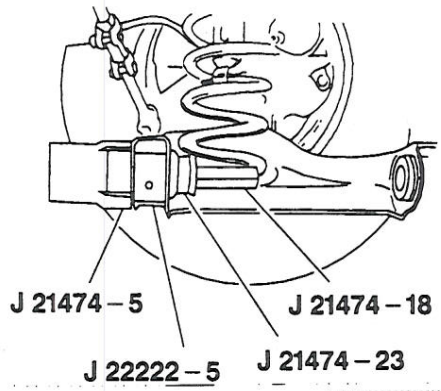


Fig. 16 Lower control arm front bushing removal. 2WD models

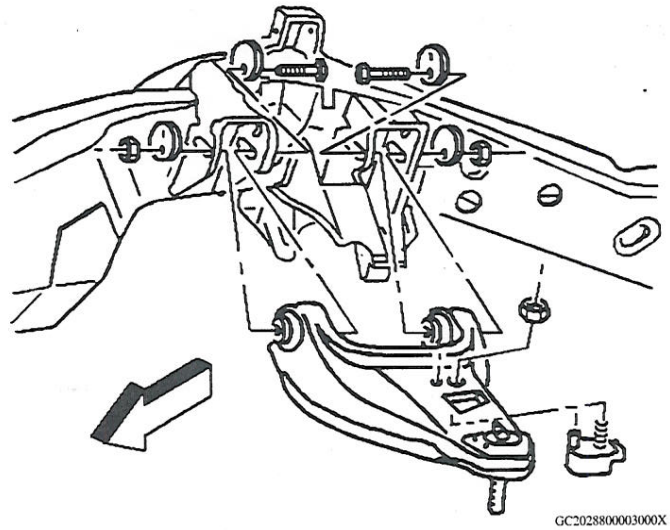


Fig. 12 Upper control arm replacement. 4WD models

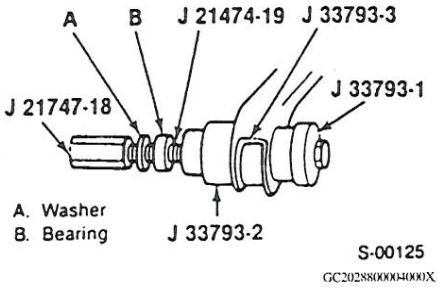


Fig. 14 Upper control arm bushing removal. 2WD models

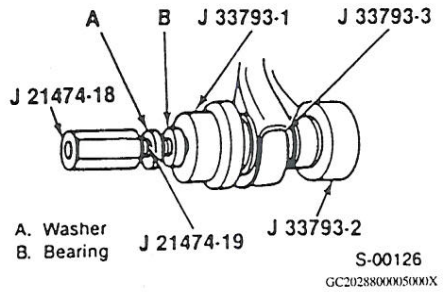


Fig. 15 Upper control arm bushing installation

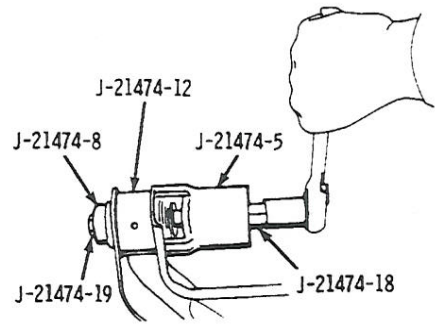


Fig. 17 Lower control arm rear bushing removal. 2WD models

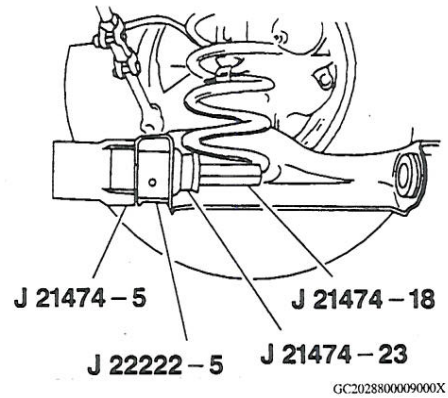


Fig. 18 Lower control arm front bushing installation. 2WD models

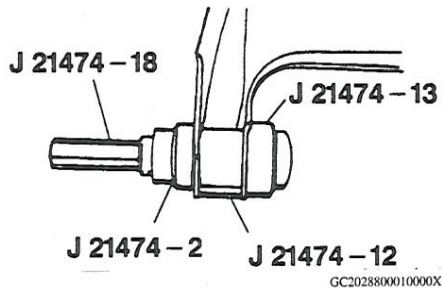


Fig. 19 Lower control arm front bushing flaring. 2WD models

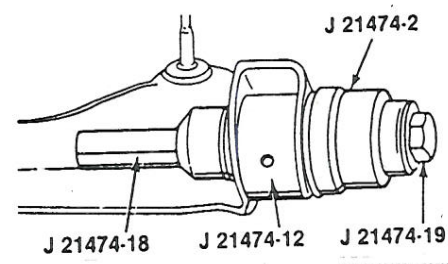


Fig. 20 Lower control arm rear bushing installation. 2WD models

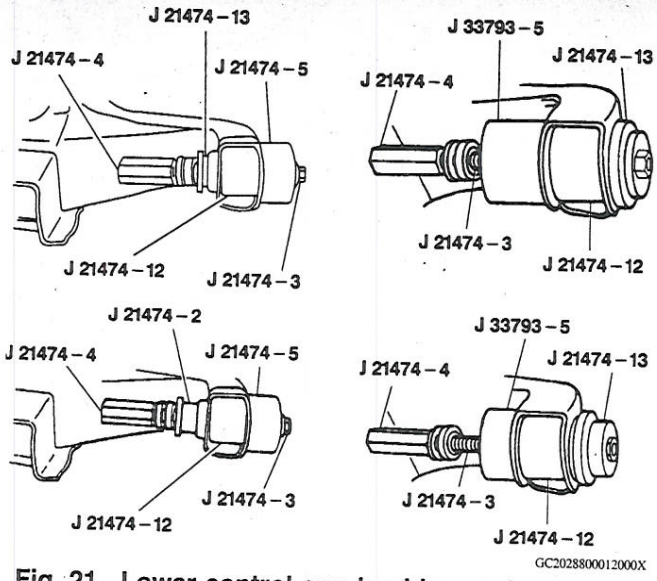


Fig. 21 Lower control arm bushing replacement. 4WD models

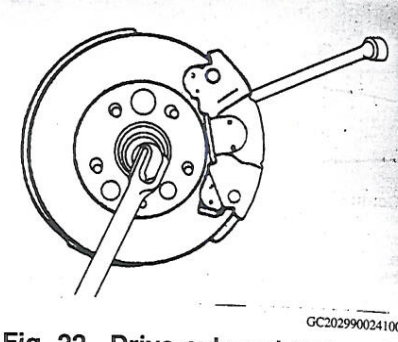


Fig. 22 Drive axle nut removal. 4WD models

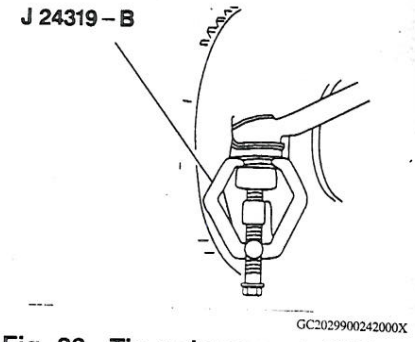


Fig. 23 Tie rod removal. 4WD models

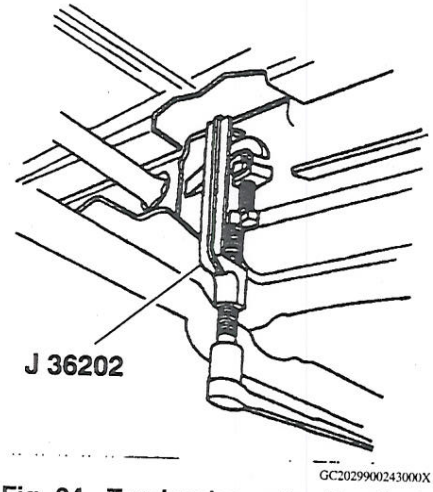


Fig. 24 Torsion bar adjusting bolt removal. 4WD models

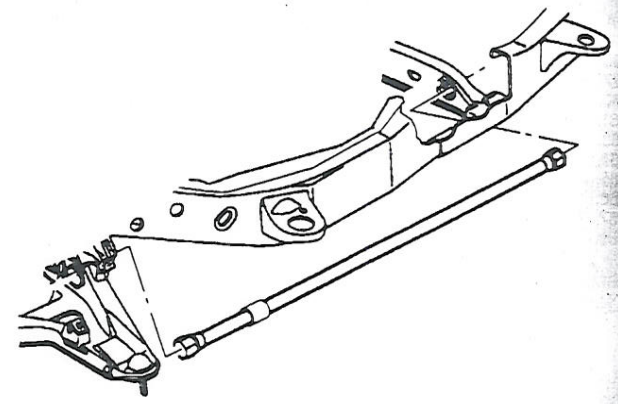


Fig. 25 Torsion bar removal. 4WD models

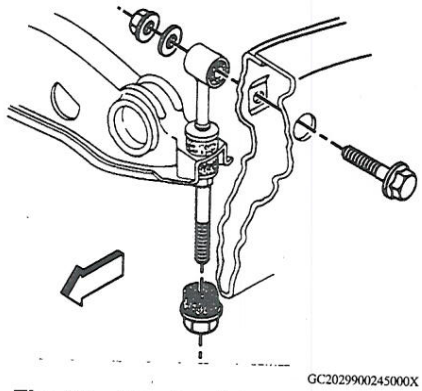


Fig. 26 Torsion bar upper link removal. 4WD models

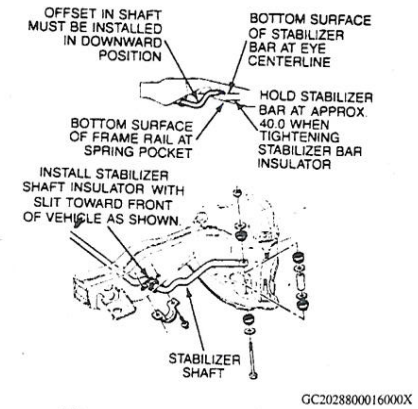
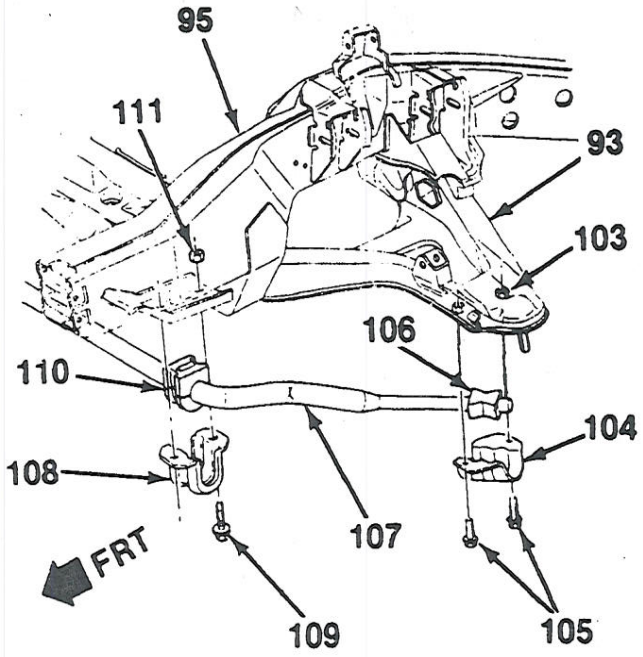

OFFSET IN SHAFT MUST BE INSTALLED IN DOWNWARD POSITION
BOTTOM SURFACE OF STABILIZER BAR AT EYE CENTERLINE
HOLD STABILIZER BAR AT APPROX. 40.0 WHEN TIGHTENING STABILIZER BAR INSULATOR
BOTTOM SURFACE OF FRAME RAIL AT SPRING POCKET
INSTALL STABILIZER SHAFT INSULATOR WITH SLIT TOWARD FRONT OF VEHICLE AS SHOWN.
STABILIZER SHAFT
GC20288000160000X

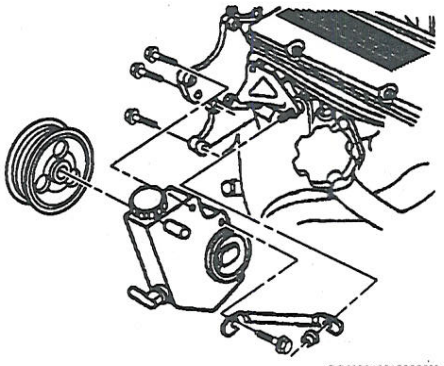
Fig. 27 Stabilizer bar replacement. 2WD models



93. Lower Control Arm
95. Frame
103. Weld Nut
104. Clamp
105. Bolts
106. Insulator
107. Stabilizer Shaft
108. Clamp
109. Bolt
110. Insulator
111. Nut

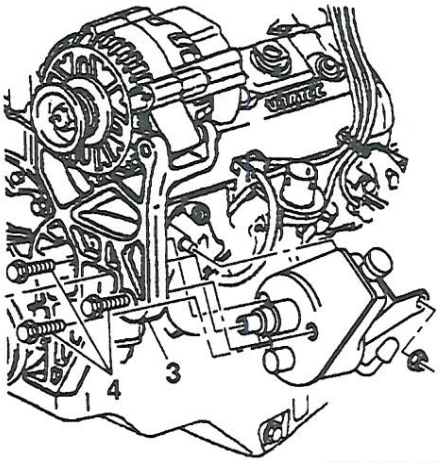
GC2028800017000X

Fig. 28 Stabilizer bar replacement. 4WD models



GC6029400122000X

Fig. 29 Power steering pump replacement. 2.2L engine



GC6029400123000X

Fig. 30 Power steering pump replacement. 4.3L engine

TIGHTENING SPECIFICATIONS

Year	Component	Torque, Ft. Lbs.
2WD MODELS		
1997–2001	Lower Ball Joint	83
	Lower Control Arm Bushing	20
	Lower Control Arm To Frame Attaching Nut	①
	Power Steering Pump Mounting Bolts	20
	Power Steering Pump Pressure Line Fitting	20
	Power Steering Pump Rear Brace Nut To Engine	18.5
	Rear Brace Nut To Power Steering Pump	33
	Service Ball Joint To Upper Control Arm	17
	Shock Absorber To Control Arm Bolts	20
	Shock Absorber Upper Attaching Nut	8
	Splash Shield To Steering Knuckle	10
	Stabilizer Bar Bracket To Frame Bolts And Nuts	24
	Stabilizer Link Nut	13
	Steering Gear Hose Coupling	21
	Steering Gear Lower Clamp Bolt	26
	Steering Gear Side Cover Bolts	45
	Steering Gear To Frame Bolts	55
	Tie Rod End To Steering Knuckle	40
	Upper Ball Joint	61
	Upper Control Arm To Frame Attaching Nuts	65
	Wheel Lug Nuts	②
4WD MODELS		
1997–2001	Axle Nut	180
	Ball Joint Retaining Nuts	17
	Driveshaft Nut	180
	Hub & Bearing Assembly Shield & Knuckle	86
	Hub Nut	180
	Lower Ball Joint	83
	Lower Control Arm To Frame Attaching Bolts	148
	Lower Control Arm To Frame Attaching Nuts	92
	Power Steering Pump Mounting Bolts	36
	Power Steering Pump Pressure Line Fitting	20
	Power Steering Pump Rear Brace Nut To Engine	18.5
	Rear Brace Nut To Power Steering Pump	33
	Retainer To Torsion Bar Support Bolts	26
	Service Ball Joints To Control Arm	17
	Shock Absorber Lower Attaching Nut	54
	Shock Absorber Upper Attaching Nut	54
	Stabilizer Bar Clamp To Frame Bolts	35
	Stabilizer Bar Clamp To Lower Control Arm Bolts	24
	Steering Gear Hose Coupling	21
	Steering Gear Lower Clamp Bolt	26
	Steering Gear Side Cover Bolts	45
	Steering Gear To Frame Bolts	55
	Tie Rod End To Steering Knuckle Nut	35
	Torsion Bar Support Retainer Bolts And Nuts	26
	Upper Ball Joint	61
	Upper Control Arm To Frame Attaching Nuts	70
	Wheel Lug Nuts	②

① — Front, 94 ft. lbs.; rear, 66 ft. lbs.
② — Aluminum wheels, 90 ft. lbs.; steel wheels, 73 ft. lbs.